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| 09/701,430 | 11/29/2000 | Toshio Yamada | WATK:204 | 9774 |

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| EXAMINER |
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LEUNG, JENNIFER A

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| ART UNIT | PAPER NUMBER |
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1764

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07/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/701,430

Applicant(s)

YAMADA ET AL.

Examiner

Jennifer A. Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2006 and 10 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed August 14, 2006 and Applicant's amendment, in response to a Notice of Non-Responsive Amendment, filed April 10, 2007 have been received and carefully considered. Claims 6 and 7 are cancelled. Claims 1-5 and 8 are under consideration.
2. The supplemental amendment filed on April 10, 2007, in which claims 1-3 were further amended, was not entered because supplemental amendments are not entered as a matter of right except as provided in 37 CFR 1.111(a)(2)(ii). The supplemental amendment is clearly not limited to placement of the application in condition for allowance. Thus, the Examiner will only address the claims as presented in the amendment filed on August 14, 2006.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Locker et al. (EP 859,133) in view of Close et al. (US 3,959,865).

Regarding claim 1, Locker et al. (see, for example, col. 4, lines 30-34; col. 7, lines 5-19; Figs. 1A, 1B) discloses an apparatus comprising:

- a ceramic honeycomb structure **12**;
- a metal case **16** having two opposing fully open ends; and
- a non-intumescent ceramic fiber mat holding member **14** located between the ceramic honeycomb structure **12** and the metal case **16**.

The apparatus of Locker et al. is substantially the same as that of the instant claims, but Locker et al. fails to disclose whether the ceramic honeycomb structure is fixed beforehand within the metal case, e.g., the honeycomb structure is not loaded with a catalyst.

However, Close et al discloses that the catalyst may be deposited on the catalyst support before or after being mounted in a casing (col. 5, lines 36-43).

It would have been obvious to one having ordinary skill in the art to alternately mount the ceramic honeycomb structure, beforehand, within the metal case as taught by Close et al., in the apparatus of Locker et al, on the basis of its suitability for the intended use as a matter of obvious design choice, because either method is conventional in the art and no cause for patentability in apparatus claims.

Regarding claim 5, Locker et al. discloses that the metal case has a tourniquet structure (see, for example, col. 4, line 41).

4. Claims 2-4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Locker et al. (EP 859,133) in view of Close et al. (US 3,959,865), as applied to claims 1 and 5 above,

and further in view of Machida et al. (US 5,866,079).

The modified apparatus of Locker et al. is substantially the same as that of the instant claims. The collective teaching of Locker et al. and Close et al., however, is silent as to the ceramic fibers of the holding materials having the specific diameter as claimed in claim 8, the metal case having the specific case structure as claimed in claim 4, and the cell walls having the specific thicknesses as claimed in claims 2 and 3.

Machida et al., however, evidences the conventionality of providing an apparatus comprising a holding material made of non-intumescent ceramic fiber mat, where the fiber has a diameter of 2-6 μm (col. 75, line 31 to col. 76, line 10); a metal case having either stuffing structure or a tourniquet structure (see, for example, FIGs. 1A, 1B, 4A, 4B, 5A, 5B); and a cell wall thickness from 0.05 to 0.15 mm, which encompasses the instantly claimed range (col. 42, lines 5-18).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to select the specific ceramic fiber diameter as taught by Machida et al. for the ceramic fiber in the modified apparatus of Locker et al, if not inherent therein, so as to effectively protect the honeycomb structure from damage in a practical use condition.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to alternately select an appropriate structure for the metal case, such as the stuffing structure as taught by Machida et al., for the metal case in the modified apparatus of Locker et al, on the basis of its suitability for the intended use as a matter of obvious design choice, since either structure is conventional in the art and no cause for patentability in apparatus claims.

Lastly, it would have been obvious for one having ordinary skill in the art at the time the invention was made to substitute the honeycomb structure of Machida et al. for the honeycomb structure in the modified apparatus of Locker et al., since the thin wall honeycomb structure would increase the open frontal area and decrease pressure loss, as taught by Machida et al.

5. Claims 1-5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable by Langer et al. (WO 98/35144) in view of Close et al. (US 3,959,865) and Machida et al. (US 5,866,079).

Langer et al. (see, for example, pages 20-23) discloses an apparatus comprising:

a ceramic honeycomb structure **20**;

a metal case **11**; and

a holding material **30** located between the honeycomb structure and the metal case; the holding material comprising non-intumescent ceramic fibers; the thickness of the cell wall being 0.1 mm or less.

The apparatus of Langer et al. is substantially the same as that of the instant claims, but Langer et al. fails to disclose the specific type of casing as claimed.

Close et al., however, teaches an apparatus comprising a ceramic honeycomb structure **20** before carrying a catalyst; a metal case **10** having opposite fully open ends (e.g., prior to assembling end portions **12**) and holding materials **30**, **22**, located between the ceramic honeycomb structure **20** and the metal case **10** (col. 2, lines 18-31; col. 3, lines 16-17, 47-60; col. 5, lines 36-46; col. 6, lines 12-14, Fig. 1).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to select an appropriate type of casing structure, such as the conventional structure of a metal case with two opposite fully open ends, for the metal case in the apparatus of Langer et al.,

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on the basis of its suitability for the intended use as a matter of obvious design choice, since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art, absence showing any unexpected results. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Because Langer et al. does not require any priority in coating the catalyst and mounting the catalyst carrier structure, it would have been obvious for one of ordinary skill in the art at the time the invention was made to deposit the catalyst onto the ceramic honeycomb structure after mounting the structure in the metal case, as taught by Close et al, since both coating methods are conventional in the art and no cause for patentability here.

The same comments with respect to the specific type of the holding materials and the specific type of the case structure in Machida et al. apply (see above).

Response to Arguments

6. Applicant's arguments filed on August 14, 2006 and April 10, 2007 have been fully considered but they are not persuasive.

Comments regarding the rejection of claims 1 and 5 under 35 U.S.C. 103(a) as being unpatentable over Locker et al. (EP 859,133) in view of Close et al. (US 3,959,865)

Applicants (at page 6, lines 3-15; see response filed 8/14/06) argue that Locker et al. fails to disclose whether the ceramic honeycomb structure may be fixed beforehand within the metal case, since Locker et al. states that “the honeycomb substrate is typically treated with a catalyst containing washcoat prior to installation in the metal shell.” Applicants further argue that Locker et al. “does not disclose the problems in the prior art... as discussed in applicant’s specification.”

The Examiner respectfully disagrees. One cannot show nonobviousness by attacking

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references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Furthermore, the reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant. See, e.g., *In re Kahn*, 441 F.3d 977, 987, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006); *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1323, 76 USPQ2d 1662, 1685 (Fed. Cir. 2005); *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990), cert. denied, 500 U.S. 904 (1991).

Applicants (at page 6, line 16 to page 7, line 13; see response filed 8/14/06) further argue,

“The Office Action also asserts that Close et al. discloses that catalyst may be deposited on the catalyst support before or after being mounted in a casing (col. 5, lines 36-43).... However, Close does not disclose the use of “a non-intumescent ceramic fiber mat holding member,” as expressly disclosed and claimed by applicants. Close discloses only the use of “layers of resilient, inorganic paper 22.” Additionally, Close makes use of cellular foam 30 to retain a catalyst substrate and such paper in a casing. Thus, there is no disclosure or teaching in Close of applicant's claimed invention, nor is there in Close any suggestion to one of ordinary skill in the art of applicants' claimed invention.”

The Examiner respectfully disagrees. Again, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Please note that the Close et al. reference was merely relied upon for its teaching that it is conventionally known in the art to apply a catalyst coating to a

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honeycomb structure either before mounting, or alternatively, after mounting the honeycomb structure within its casing (see column 4, lines 36-46).

Applicants (at page 7, lines 14-24; see response filed 8/14/06) further argue that the combination of Locker et al. and Close et al. is based upon the improper use of hindsight.

In response to Applicants' argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicants further argue,

“... the hindsight-motivated selective combination suggested in the Office Action requires one of ordinary skill in the art to discard from Locker the catalytic aspect of the catalytic converter substrate used by Locker. And, that combination requires one of ordinary skill in the art to discard the paper and foam elements which are central to the subject matter disclosed and claimed by Close. Such a combination is simply not suggested by either of the references, and the combination requires substantive changes in the disclosures of each of the prior art references to be able to arrive, by hindsight, at applicants' claimed invention.”

The Examiner respectfully disagrees. Please note that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have

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suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Comments regarding the rejection of claims 2-4 and 8 under 35 U.S.C. 103(a) as being unpatentable over Locker et al. (EP 859,133) in view of Close et al. (US 3,959,865), as applied to claims 1 and 5 above, and further in view of Machida et al. (US 5,866,079)

Applicants (at page 8, under item 2; see response filed 8/14/06) argue that Locker et al. fails to disclose an apparatus comprising the claimed features of: a ceramic fiber having the diameter range of claim 8, the specific case structure of claim 4, and the cell wall thickness of claims 2 and 3. Applicants, however, have not provided any reasoning as to why one of ordinary skill in the art would not be motivated to further modify the apparatus of Locker et al. to comprise said features, taught by Machida et al. It appears that Applicants' arguments, with respect to the combination of Locker et al., Close et al. and Machida et al., are based upon the asserted deficiencies of the combination of Locker et al. and Close et al. Thus, the same comments with respect to Locker et al. and Close et al., as set forth above, apply.

Comments regarding the rejection of claims 1-5 and 8 under 35 U.S.C. 103(a) as being unpatentable by Langer et al. (WO 98/35144) in view of Close et al. (US 3,959,865) and Machida et al. (US 5,866,079)

Applicants (at page 9, under item 3; see response filed 4/10/07) argue that Langer et al. fails to disclose an apparatus comprising the features of a honeycomb structure that is not loaded with catalyst, and a canning structure that consists of two opposing fully open ends.

Applicants' arguments, however, are not found persuasive, since one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re*

Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Applicants have not provided any reasoning as to why one of ordinary skill in the art would not have been motivated to modify the apparatus of Langer et al. to comprise such features, taught by Close et al. and Machida et al.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

* * *

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is (571) 272-1449. The examiner can normally be reached on 9:30 am - 5:30 pm Monday through Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

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Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

^{DAL}
Jennifer A. Leung
June 27, 2007


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